

1-14. (CANCELED)

15. (NEW) An instrument for drilling root canals, specifically a flexible drilling instrument designed to be mechanically driven by an electric motor, the instrument (10) comprising an end section (11) to be mounted in a chuck driven by said electric motor, a proximal region (14) adjacent to said end section (11), a central region (13) extending from said proximal region, and a distal region (12) extending from said central region (13) for guiding the instrument through the root canal, an envelope (20) comprising the proximal, central and distal regions has a generally inverted cone shape, with a widest portion corresponding to the distal region (12) and a smallest portion corresponding to the proximal region (14).

16. (NEW) The instrument according to claim 15, wherein the envelope (20) has a truncated cone shape and comprises a vortex angle (Φ) that is identical along its entire length.

17. (NEW) The instrument according to claim 15, wherein the envelope (20) consists of several juxtaposed sections (C, D, E, F) extending axially from one another, each of said sections having a truncated cone shape and each of said truncated cones comprising a different vortex angle (Φ_1 , Φ_2 , Φ_3 , and Φ_4), with a widest vortex angle (Φ_1) corresponding to the distal region (12), a smallest vortex angle (Φ_4) corresponding to the proximal region (14), and one or more intermediate vortex angles (Φ_2 , Φ_3) corresponding to the central region (13).

18. (NEW) The instrument according to claim 15, wherein an angle of the envelope (20) relative to an axis of the instrument decreases progressively and regularly from the distal region (12) to the proximal region (14).

19. (NEW) The instrument according to claim 15, wherein the instrument further comprises a junction region (17) between said proximal region (14) and said end section (11), said junction region comprising a partial break calibrated to split apart when a predetermined drive torque is applied.

20. (NEW) The instrument according to claim 19, wherein the partial break consists of a portion of reduced section.

21. (NEW) The instrument according to claim 19, wherein the partial break consists of a modification in one or more of type and structure of material used for the instrument.

22. (NEW) The instrument according to claim 19, wherein the partial break consists of at least one peripheral notch (18) formed in said junction region (17).

23. (NEW) The instrument according to claim 19, wherein the predetermined drive torque corresponds to a torque at which the distal region of the instrument breaks.

24. (NEW) The instrument according to claim 15, wherein the distal region (12) comprises a rounded tip.

25. (NEW) The instrument according to claim 15, wherein the central region (13) is polygonal and comprises hollowed flutes (16) with sharp cutting edges that are generally helical.

26. (NEW) The instrument according to claim 15, wherein the central region (13) is polygonal and comprises flutes (16) with blunt edges that are generally helical.

27. (NEW) The instrument according to claim 22, wherein the central region (13) comprises non-working sections and working sections, said non-working sections being smaller in section than the working sections.

28. (NEW) The instrument according to claim 15, wherein the central region (13) comprises helical sections (16a) and rectilinear sections (16b).